



Company: CNX Resources  
 Well: MAJ10 AHSU  
 API: 47-051-02068  
 Rig Name: Decker 11  
 State/County: West Virginia /Marshall  
 VS-Azi: 0.00 Degrees  
 Latitude: 39.91852, Longitude: -80.53714  
 Grid North = True North +0.66 degs (NAD 27)  
 Grid Correction Applied = +0.66 degs

FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= 12 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Error Model: VESSI\_GYROFLEX.IPM

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 1/26/2019 / 00:06

VES Survey International

Morgantown, WV

304-777-2189

Tim Dillon

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WV Department of  
 Environmental Protection

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.25	257.87	100.00	-0.05	-0.21	-0.05	0.22	257.87	0.25
200.00	0.07	297.64	200.00	-0.06	-0.48	-0.06	0.48	262.55	0.20
300.00	0.03	38.98	300.00	-0.02	-0.52	-0.02	0.52	268.27	0.08
400.00	0.06	297.41	400.00	0.03	-0.55	0.03	0.55	272.91	0.07
500.00	0.01	309.35	500.00	0.06	-0.61	0.06	0.61	275.71	0.05
600.00	0.02	341.35	600.00	0.09	-0.62	0.09	0.63	277.94	0.01
700.00	0.00	82.68	700.00	0.11	-0.63	0.11	0.64	279.60	0.02
800.00	0.12	142.56	800.00	0.02	-0.56	0.02	0.56	272.49	0.12
900.00	0.12	333.35	900.00	0.04	-0.55	0.04	0.55	274.05	0.24
1000.00	0.39	322.30	1000.00	0.40	-0.80	0.40	0.90	296.71	0.27
1100.00	0.61	306.89	1099.99	0.99	-1.44	0.99	1.75	304.64	0.26
1200.00	0.63	294.54	1199.99	1.54	-2.36	1.54	2.82	303.09	0.14
1300.00	0.21	316.63	1299.99	1.91	-3.00	1.91	3.55	302.48	0.44
1400.00	0.28	300.92	1399.98	2.17	-3.33	2.17	3.97	303.04	0.09
1500.00	0.14	294.14	1499.98	2.34	-3.65	2.34	4.34	302.67	0.13
1600.00	0.07	303.05	1599.98	2.43	-3.82	2.43	4.52	302.44	0.07
1700.00	0.20	346.15	1699.98	2.63	-3.91	2.63	4.71	303.91	0.15
1800.00	0.04	336.41	1799.98	2.84	-3.97	2.84	4.88	305.53	0.16
1900.00	0.19	68.78	1899.98	2.93	-3.83	2.93	4.82	307.42	0.20
2000.00	0.21	67.70	1999.98	3.06	-3.51	3.06	4.66	311.09	0.02
2100.00	0.09	75.56	2099.98	3.15	-3.27	3.15	4.54	313.95	0.12
2200.00	0.01	350.62	2199.98	3.18	-3.19	3.18	4.50	314.88	0.09
2300.00	0.08	106.90	2299.98	3.17	-3.13	3.17	4.45	315.36	0.08
2400.00	0.05	126.57	2399.98	3.13	-3.04	3.13	4.36	315.85	0.04
2500.00	0.03	97.70	2499.98	3.10	-2.98	3.10	4.30	316.16	0.02
2600.00	0.05	95.33	2599.98	3.09	-2.91	3.09	4.25	316.74	0.02
2700.00	0.08	0.14	2699.98	3.16	-2.87	3.16	4.27	317.78	0.10
2800.00	0.04	92.76	2799.98	3.23	-2.83	3.23	4.30	318.80	0.10
2900.00	0.05	2.56	2899.98	3.27	-2.79	3.27	4.30	319.54	0.06
3000.00	0.04	91.32	2999.98	3.31	-2.76	3.31	4.31	320.25	0.06
3112.00	0.21	6.85	3111.98	3.52	-2.69	3.52	4.43	322.59	0.19

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
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HORIZONTAL DISPLACEMENT IS  
4.43 FEET AT 322.59 DEGREES

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Ground Elevation		1317 GL Elevation				MAJ-10A-HSU SHL				CURRENT WELLBORE DIAGRAM	
WELLBORE DIAGRAM		HOLE	CASING	GEOLOGY	MD-GL	TVD-GL	MUD	CEMENT	COMMENTS		
		36"	30" L/S	Conductor	100	100	AIR	Grout to Surface	Drill with auger Stabilize surface fill/soil		
		24"	18-5/8" 87.5# J-55 BTC	Washington Coal	352	AIR / FW Mist	BJ 15.6 ppg Class A + 2% CaCl2 + 1/4 pps Flake 50% OH Excess Yield = 1.19 TOC @ surface	Set through fresh water zones  Set through coal zones			
				Deepest Fresh Water	482						
				Waynesburg 2 Coal	489						
				Waynesburg 1 Coal	490						
				Sewickley Coal	690						
				Pittsburgh Coal	779						
		FW / Coal Casing	833	BJ 16.0 ppg Class H Gas block blend with additives 35% OH Excess Yield = 1.16 TOC @ surface	Cemented to surface with 2264 sxs (466 bbis), 5 bbis cement returned to surface						
		Gas Sand	1403								
		17-1/2"	13-3/8" 68.0# L-80HC BTC	Salt Sands	1470	AIR / Soap	Set through gas storage interval  Casing to be set below the Fifth Sand				
				Big Lime	1860						
				Big Injun Sand	1966						
				Gantz Sand	2172						
Gordon Sand	2776										
Fifth Sand	2827	Intermediate Casing	3196								
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